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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,084	03/02/2004	Todd W. Steigerwald	5867-00800	2937

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EXAMINER

NGUYEN, DONGHAI D

ART UNIT	PAPER NUMBER
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3729

MAIL DATE	DELIVERY MODE
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11/24/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/791,084	Applicant(s) STEIGERWALD ET AL.	
	Examiner DONGHAI D. NGUYEN	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 24-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 24-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on May 28, 2010 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-9 and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: providing a wavelength of a carrier frequency of a signal transmitted by one of the pair of antennas.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

Art Unit: 3729

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-9 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,411,261 to Lilly or in view of US Patent 6,542,131 to Haapanen.

Regarding claim 1, Lilly discloses a method for forming an apparatus (100, see Fig. 2B) configured to reduce electromagnetic interference between a pair of antennas coupled to a wireless communication device (See Col. 1, lines 37-40 and Col. 3, lines 50-57), the method comprises: extracting a shape of the apparatus from a thin sheet of conductive material (104, 304, 804; etc.); and folding the shape into a plurality of resonant circuit elements (see Fig. 2B has the same configuration as Fig. 7D of application), each configured to resonate at or near a carrier frequency of a signal transmitted by only one of the pair of antennas (see Col. 1, lines 28-32).

Lilly does not teach the apparatus is formed having a length substantially equal to one-half of a wavelength to the carrier frequency. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the apparatus having the length substantially equal to one-half of the wavelength to the carrier frequency, sine it has been held that where the general condition (forming resonant circuit elements) of a claim are disclosed in the prior art, discovering the optimum or workable ranges (length of the apparatus) involves only routine skill in the art. In re Aller, 105 USPQ 233.

In an alternative, Haapanen teaches the an apparatus (5) having length substantially equal to one-half of a wavelength (see Col. 2, lines 47-49) to the carrier frequency of one of the antennas (1, 2) for suppressing mutual interference between antennas place close to each other (see Abstract). Therefore, it would have been obvious to one having ordinary skill in the art at

Art Unit: 3729

the time the invention was made to modify the invention of Lilly by utilizing the apparatus having a length substantially equal to one-half of a wavelength to the carrier frequency as taught by Haapanen for suppressing mutual interference between antennas.

Regarding claims 2-5, Lilly discloses the thin sheet of conductive material comprises a metal selected from a group comprising iron (Fe), copper (Cu), gold (Au), silver (Ag), tin (Sn), and nickel (Ni), or a metal alloy selected from a group comprising beryllium copper (BeCu), phosphor bronze (Ph+Cu/Zn/Sn), magnesium alloys (Mg/Al/O) and steel (Fe/C) and a primarily ferrous-based material is stamped and laser or chemical etching (See, Col. 4, lines 24-32). Note that since Lilly discloses the same the conductive material for forming the apparatus as claimed above. Therefore, it is inherently comprised a relative permittivity value of about 0.0 F/m to about 1.0 F/m and a relative permeability value of about 10 H/m to about 100,000 H/m.

Regarding claim 6, Lilly discloses the plurality of resonant circuit elements comprise a plurality of rectangular elements (1034 or 1134 see Figs. 10-11) connected to and arranged above a common reference plane (1004 or 1104) by a plurality of vertical segments (1006 or 1106).

Regarding claim 7, Lilly discloses a dielectric material (514) between the plurality of rectangular elements and the common reference plane.

Regarding claims 8-9 and 24, Lilly discloses the plurality of resonant circuit elements include A-shaped elements (see Fig. 7), further related Figs. 8-12 show a plurality of relatively long domed elements spaced apart by a plurality of relatively thin slots and arranging a dielectric material within the relatively thin slots between the pluralities of relatively long domed elements (see Col. 7, lines 13-14).

Art Unit: 3729

Regarding claim 26, Lilly discloses the plurality of resonant circuit elements having a periodic surface (1034) that is less than or equal to one-tenth of the wavelength of the carrier frequency (see Col. 4, lines 45-47 and Fig. 10 shows a periodic surface 1034 is about the same or less than the height of the apparatus).

Regarding claim 27, Lilly discloses the apparatus is formed without a dielectric substrate (see Fig. 2B).

Regarding claim 25, Lilly/Haapanen does not disclose the thin sheet of conductive material is selected from a range of thicknesses comprising about 0.1 mm to about 0.2 mm. It would have been an obvious matter of design choice to one having ordinary skill in the art at the time the invention was made to choose the thin sheet of conductive having any thickness level such as about 0.1 mm to about 0.2 mm, since applicants have not disclosed the specific thickness of about 0.1 mm to about 0.2 mm for the thin sheet of conductive material, would solve any stated problem or for any particular purpose and it appears that the invention would perform well with the thin sheet of conductive material thickness as disclosed by Lilly/Haapanen.

Response to Arguments

6. Applicant's arguments with respect to claims 1-9 and 24-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DONGHAI D. NGUYEN whose telephone number is (571)272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris H. Banks can be reached on (571)-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN
November 22, 2010

/Donghai D. Nguyen/
Primary Examiner, Art Unit 3729